Fetal Alcohol Exposure

NIAAA Social Work Education Module 10K

(revised 02/05)

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Learning Objectives

- Understand the differences between fetal alcohol syndrome (FAS), alcohol-related birth defects (ARBD), and alcohol-related neurodevelopmental disorder (ARND);
- Understand that alcohol has a teratogenic effect on the developing fetus;
- Learn how to identify the physically discriminating features and some of the behavioral traits of children that are often associated with FAS or other alcohol-related birth defects; and
- Understand how to implement appropriate interventions and referrals.

Why focus on FAS versus the other lesser known childhood disorders?

Limited knowledge offered--if any--on FAS in health professions education training (social work, psychologists, and others)

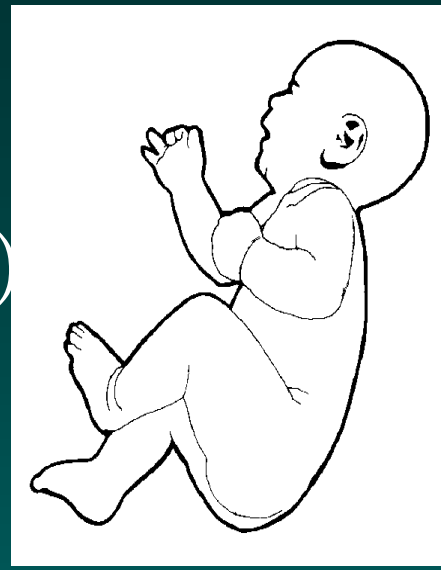
FAS is generally not covered in substance abuse certification since focus is primarily devoted to behavioral treatment

Impact on families and society

- Physical & emotional suffering
- Lost productivity
- Economic impact ($4 billion)*

*(Harwood, 2000)

Overview: Definitions[1]



- Teratogens/Teratogenic Agents
- Fetal Alcohol Spectrum Disorders (FASD)
  - Fetal Alcohol Syndrome (FAS)
  - Alcohol-Related Birth Defects (ARBD)
  - Alcohol-Related Neurodevelopmental Disorder (ARND)

[1]The criteria used to established diagnosis for FASD is still Being debated; see Hoyme (2005) for historical account.

Alcohol Use During Pregnancy

- No known safe level of use
- Affects the fetus during all 3 trimesters
- Nearly 13% of pregnant women drink alcohol
- Approximately 3% of all pregnant women drink two or more drinks per day or five or more drinks per occasion
- Organic effects of alcohol exposure are not reversible

Fetal Alcohol Syndrome (FAS) estimate: 0.5 - 2 children per 1000 live births

Alcohol Use During Pregnancy

- Miscarriage risk increases
- Premature birth risk increases
- Low birth weight risk increases
- FAS risk increases
- ARND risk increases
- ARBD risk increases
- Abnormalities found in the brainstems of SIDS babies born to drinking mothers.

Potential Negative Effects of Alcohol on Pregnancy

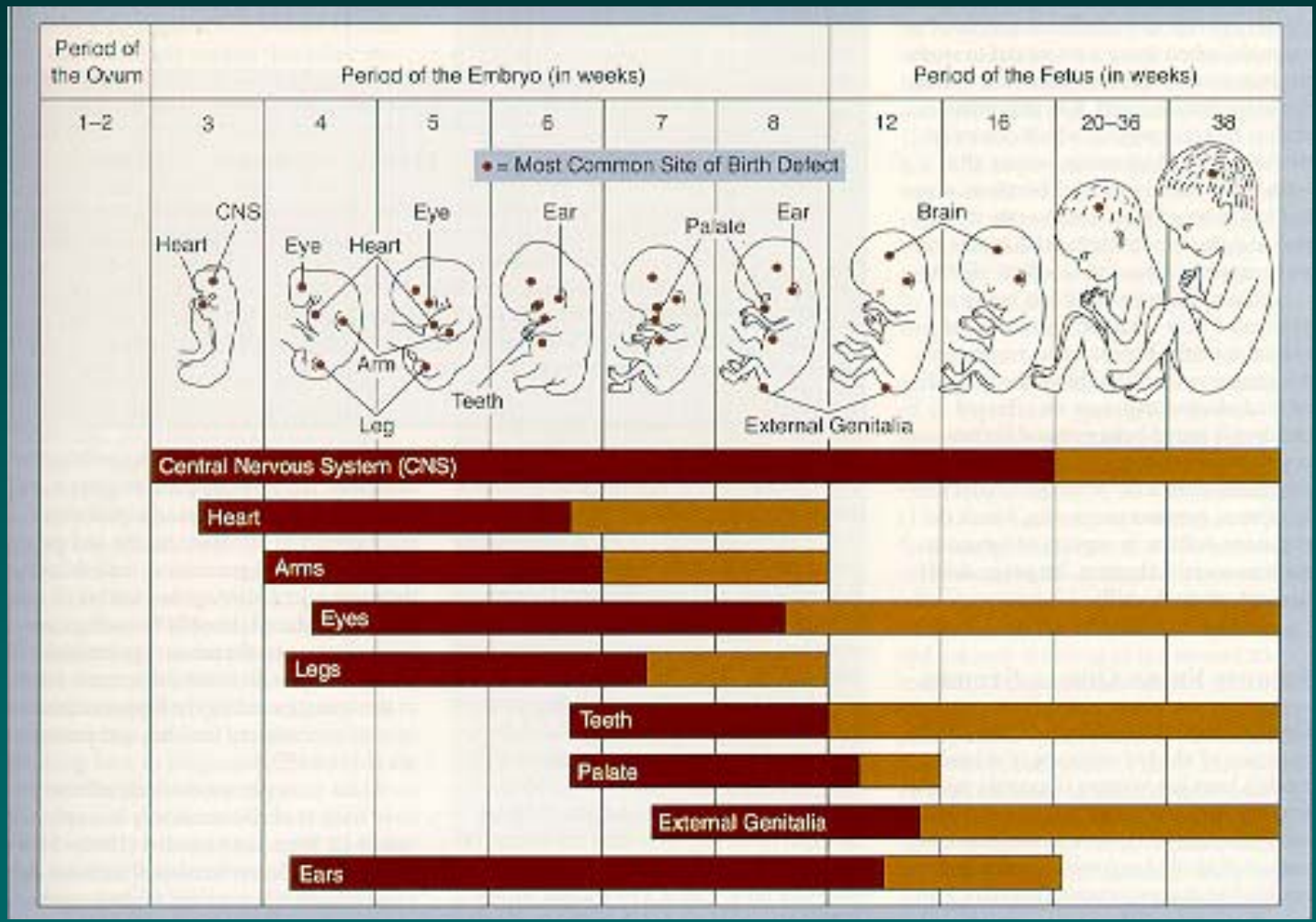
- Drinking alcohol during pregnancy is often combined with other risks, such as:
  - Domestic violence
  - Poor nutrition
  - Lack of prenatal care
  - Smoking
  - Use of illicit drugs
  - Stress

Tobacco and Drug Use During Pregnancy

- Poly-drug use includes:
  - tobacco use: 17.7%
  - marijuana use: 2.9%
  - cocaine use: 0.2%

(National Household Survey of Drug Abuse, 1999)

Alcohol Exposure and Phases of Embryo/Fetal Development



Coles, 1994

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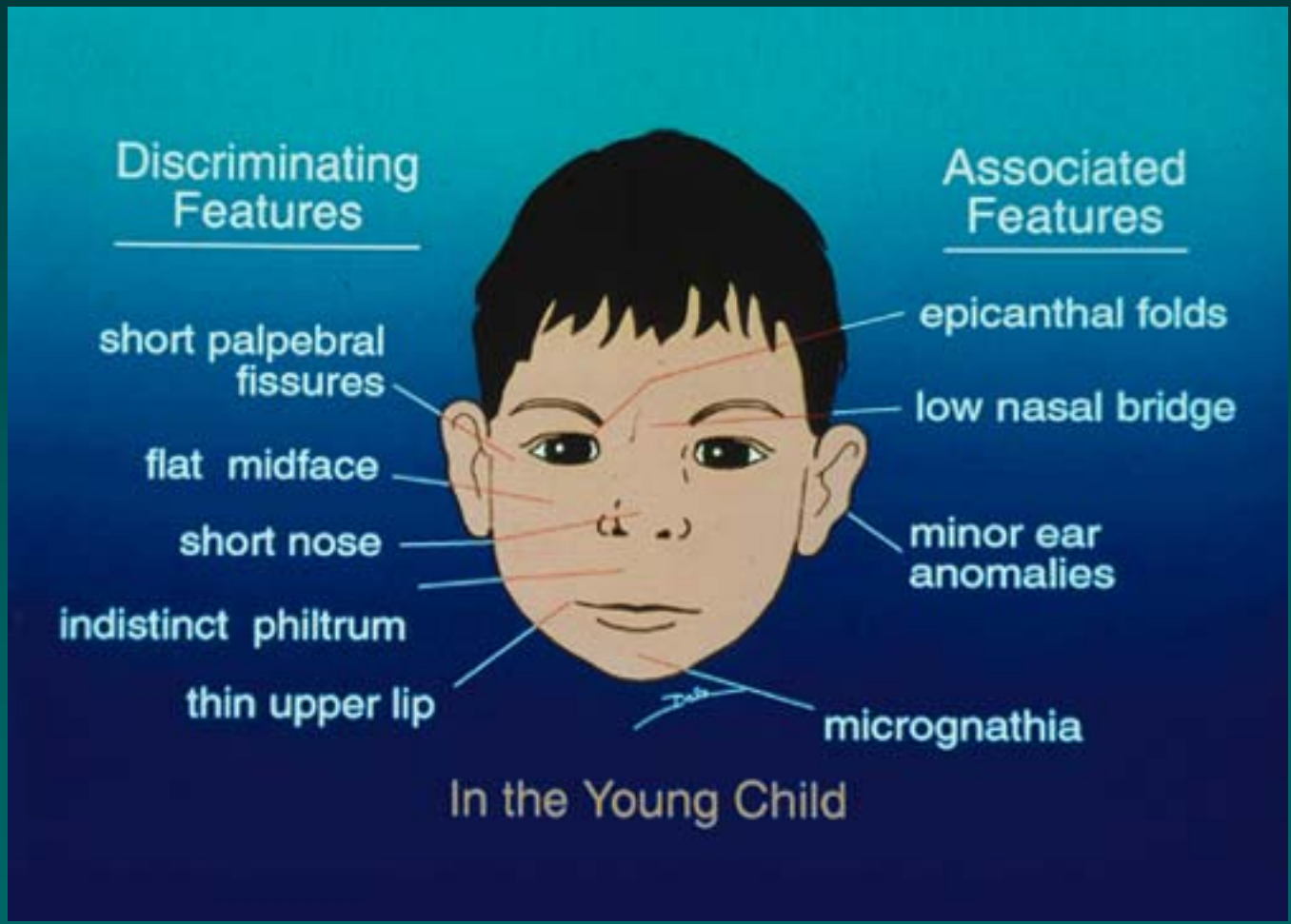
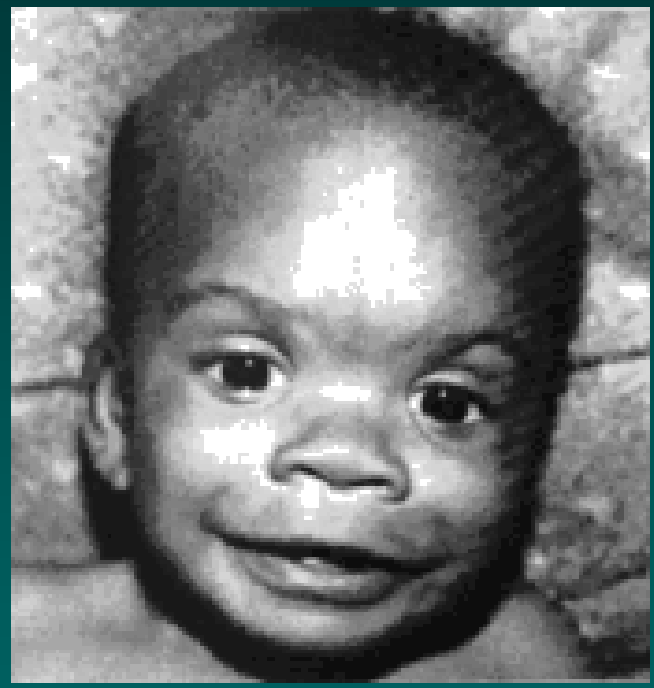
FAS Physical Growth Pattern

- Head circumference
  ≤ 10th percentile
- Underweight
- Height/length shortened

FAS Facial Features



Fetal Alcohol Syndrome; Facial feature characteristics



(www.taconic.net/seminars/fas-b.htm.)

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A

B

Fig. A:
Fetal Alcohol Syndrome, Diagnosis, Epidemiology, Prevention, and Treatment. (Institute of Medicine, 1996).

Fig. B:
Reprinted with permission from Clarren & Smith, (1978). Copyright 1978 by the *New England Journal of Medicine*, Massachusetts Medical Society.

C

D

Figs. C and D:
Reprinted with permission from Jones et al. (1973). Copyright 1973 by the *Lancet* Ltd.

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Streissguth, et al., 1994

FASD: Brain Regions Affected

- The corpus callosum
- The cerebral cortex
- The hippocampus and cerebellum

Mattson, et al., 1994

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Neurological Signs Associated With FASD

For Newborns:

- Sleep disturbances
- Feeding difficulties
- Reduced attention
- Decreased visual focus
- Decreased response to noise/stimulation

ARND Associated with FASD

For children 18-24 Months:

- Short attention span
- Increased activity
- Altered motor skills
- Increased stress reactivity

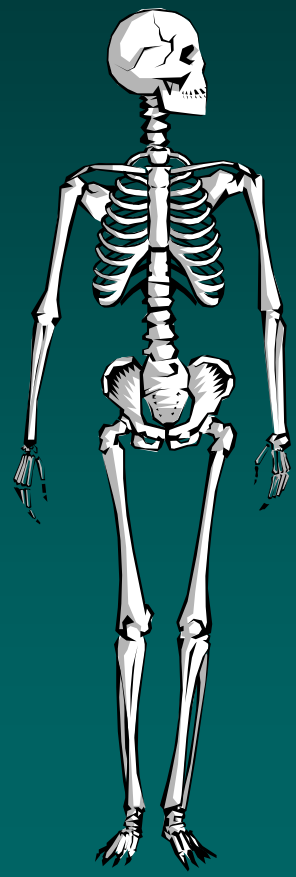
ARND Associated with FASD

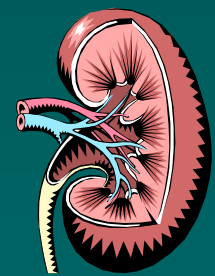
For Children 4-5 Years Old:

- Delayed speech development
- Altered motor skills
- Attention deficits
- Learning deficits
- Caregiver concerns

Alcohol-Related Birth Defects (ARBD)

- Cardiac
- Auditory
- Ocular
- Renal
- Skeletal
- Other

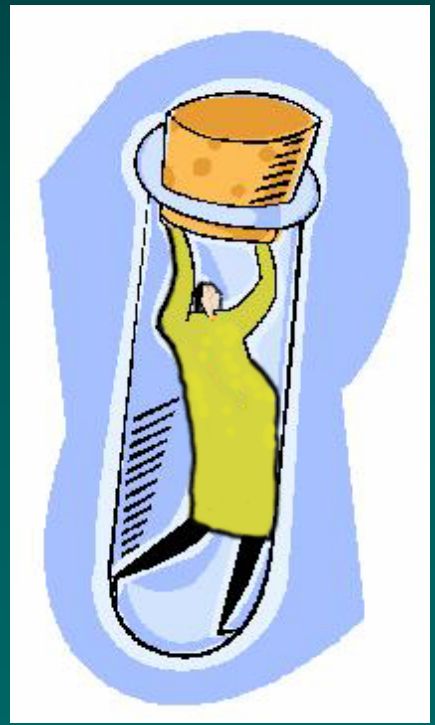




Secondary Disabilities Associated with FASD

Social work clients with FASD:

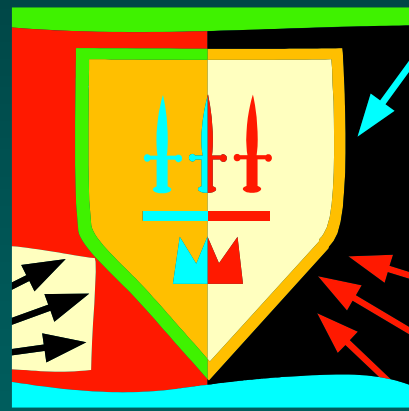
- *May respond to treatment differently from other clients*
- *May experience some secondary challenges:*
  - *Mental health problems*
  - *Disrupted school experience*
  - *Trouble with the law*
  - *Confinement*
  - *Inappropriate sexual behavior*
  - *Alcohol/drug problems*
  - *Dependent living*
  - *Employment problems*



(Streissguth, et al., 1996)

Protective Factors Against Disabilities Secondary to FASD

Although more research is needed to support these findings, (Streissguth 1996) cited the following universal protective factors beneficial to fetal alcohol-exposed children:



- Living in a stable and nurturant home environment
- Being diagnosed before 6 years old
- Never having been abused or maltreated
- Remaining in the same living situation for an average of more than 2.8 years
- Having applied for and been found eligible for Division of Developmental Disabilities Services

Protective Factors Against Disabilities Secondary to FASE (continued)

- Having a diagnosis of FAS[1] (rather than other effects of alcohol exposure)
- Having basic needs met for at least 13% of life

These protective factors will not ameliorate the underlying secondary disabilities described earlier, but can help minimize or avoid them. Social workers should encourage parents or caretakers to promote simple behaviors and activities that an FASD child can learn and eventually excel at. This includes assisting the FASD child in the development and understanding of basic (living) needs.

[1]While FAS is not presently included in DSM-IV, in most cases a diagnosis of FAS confers eligibility for early intervention services. Other alcohol-related diagnoses often do not confer such eligibility.

How Do We Prevent Fetal Alcohol Exposure and Its Negative Consequences?

- Recognize the extent of the problem
- Recognize the message that FASD is a preventable birth defect
- Consider screening all women of childbearing age
- Use appropriate interventions.

Steps for Alcohol Screening and Brief Intervention for Women of Childbearing Age

Step I - Ask about alcohol use

- Binge use
- Tolerance
- Family concern

Step II - Assess for alcohol-related problems

- Medical
- Behavioral
- Withdrawal
- Employment

continued on the next slide

Brief Advice and Referral

Step III - Advise Appropriate Action

Alcohol dependence
- Advise to abstain
- Refer to specialist
- Offer resources

At-risk/problem drinking
- Advise to cut down, pregnant women to abstain
- Set a drinking goal

Step IV- Follow Patient Progress

Early Intervention Programs And FASD

- All states participate in early intervention programs and have Coordinating Councils as advisors;
- Children with developmental delays are eligible for services, but "at risk" criteria vary from state to state;
- Children with FAS/FASD frequently are undetected by early intervention programs, educators, social workers and others in the health professions;
- FAS/FASD children have a specific constellation of early intervention needs but are often categorized as suffering with mental retardation;

Early Intervention Programs And FASD (con't)

- There are no State registries that track the prevalence and identity of FAS/FASD children needing services;
- The rate of FAS in the U.S. is thought to be between 0.5 and 2.0 per 1,000 live births
- A study done in Washington State Fostercare (Sterling and Astley, 2002) showed a prevalence rate of 10 to 15/1000, or 10 to 15 times greater than in the general population.
- 73 – 80% of children with full-blown FAS are in foster or adoptive placement (May et al., 1983; Streissguth et al. 1985).
- Fostercare parents may not be aware that prenatal alcohol exposure is the cause of learning/behavioral issues and not the result of separation from biological parents;
- Preliminary research indicates that early intervention with FAS/ARND children may be beneficial for their overall quality of life

Education Needs of Children with FASD

- Growing body of literature addressing strategies for working with children with FAS/FASD (http://www.nofas.org/educator/links.aspx)
- Those with minor disabilities can cope in a regular classroom setting with assistance of aides and resource, speech and language specialists
- Brain damage is not outgrown but disabilities and cognitive deficits may require modifications to teaching plans at different ages

The transition to middle school may be particularly difficult

Education Needs of Children with FASD (con't)

Students Affected Differently and wide variation in intellectual functioning (Streissguth et al. 1991; Kodituwakku et al. 1995). Common Learning Difficulties include difficulty with information processing and memory

- Attention difficulties
- Difficulty with abstract thought
- Math difficulties
- Reading and writing difficulties, particularly reading comprehension and organization when writing
- Problems with executive functioning

Supportive Counseling

- Traditional insight therapies may not be appropriate since insight relies on abstract reasoning
- Techniques that rely on modeling and concrete directions and demonstration might be the most therapeutic
- Differences between right and wrong may not be fully understood as contexts change and require modifications in thinking
- Children with FAS/FASD often have difficulty with impulsivity which puts them at risk of inappropriate behaviors
- Children with FAS/FASD are at risk for abuse both as victim and perpetrator, since healthy, reciprocal relationships are difficult to understand

Family Therapy

- Team of professionals involved in trajectory of care and support of family members
- Child is encouraged to be active participant
- Family therapy using a combination of behavioral and environmental modifications works best
- Therapeutic strategies that require the child to make and retaining abstract links between behavior and consequences may not be appropriate
- Learning through repetition can eventually become part of a child's normal routine
- Support groups are often beneficial

Mental Health Issues

- O'Connor (2002) and colleagues found that 87% of children exposed to alcohol *in utero* met the criteria for a psychiatric disorder
- There is some evidence of mental illness in adults with FAS/ARND
- In a small study the most reported DSM-IV axis disorder was alcohol and drug dependence, depression, and psychotic disorders, but this has not been replicated
- Streissguth (1996) reported that 15% of children 6-11 and 20% of adolescents ages 12-20 reported hearing voices and seeing visions but this might be due to visual and auditory impairments .
- The caregiving team should be alert to signs of depression
- Suicidal gestures/attempts must be addressed appropriately.
- Referral to a psychiatrist may be useful.

ADHD-Related Behavioral Problems

- Children prenatally exposed to alcohol are may exhibit behaviors consistent with ADHD
- A multifaceted approach that evaluates a child over their developmental trajectory should also include factors of maternal care, cognitive processes and other components of behavior (Coles, 2001).

Adoption/Foster Care

- Very few children with FAS live with their birth parents and may live in several homes while growing up.
- Some evidence that children adopted into new families fare better than remaining with their biological mothers in environments where alcohol and drugs continue to be used, and where healthy mother-infant interactions may be inhibited by maternal depression and low self-esteem
- Families adopting infants/children from other countries need to know that there is a high prevalence of alcohol use during pregnancy
- Adoptive parents may receive medical information about a prospective infant/child—or one already in their care—that contradicts information received from the adoption agency.

Diagnosis of FAS/ARND

- Diagnosis of FAS requires an expert trained in the branch of clinical genetics concerned with the study of patterns of growth and structural defects (dysmorphology). The child will be examined to rule out most known patterns of human malfomations before moving to the diagnosis of FAS (Hoyme et al. 2005)
- Although pediatricians are generally knowledgeable about FAS, continued efforts to educate medical practitioners about the importance of asking about prenatal alcohol exposure is critical
- Social workers should never attempt to make a diagnosis even if signs are highly suspect
- Refer clients to the appropriate experts

The Role of Social Workers in Prevention Efforts

Types of Prevention Strategies

The Institute of Medicine (IOM 1994) proposed a new framework for classifying prevention based on Gordon's (1987) operational framework of disease prevention. The prevention category is divided into three classifications--universal, selective and indicated prevention.

Social workers can play a role in encouraging healthy pregnancy from population-wide initiatives to individuals at high risk.

Levels of Prevention

Universal prevention aims to ensure that members of society understand that drinking alcohol can have deleterious consequences, particularly during pregnancy. Universal prevention encourages abstinence prior to conception and throughout pregnancy as the safest alternative. This can be accomplished collectively through public education, and individually during the therapeutic hour.

Levels of Prevention (con't)

Selective prevention are targeted to individuals or groups whose have a known risk of developing alcohol abuse or alcoholism. Women who drink alcohol and in the reproductive age range fall in this category. Talk to your female clients about their alcohol use; screen for indication of alcohol abuse and other assessments as necessary; conduct brief interventions. Make referral for formal treatment of alcohol dependence.

Levels of Prevention (con't)

Indicated prevention is targeted at high-risk individuals exhibiting detectable signs or symptoms of a condition. Women who engage in heavy drinking while pregnant or at risk of becoming pregnant are in this category. Indicated prevention involves treatment for alcohol abuse or dependence and includes her partner, family, and friends in the treatment regimen.

Conclusion

- Alcohol is a teratogen and can cause FAS and/or a variety of disabling cognitive and behavioral problems
- Alcohol use during pregnancy is the leading preventable cause of mental retardation
- Information dissemination to health professionals is a critical avenue to prevention
- Further research is needed to identify best interventions that reduce learning and behavioral impairments
- Protective factors (stable home, etc.) will not ameliorate secondary disabilities, but can help minimize or avoid them